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A.D. 1790 . . . . Nº 1754.

Brewing.

LONG'S SPECIFICATION.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, John Long, of Longville, in the County of Dublin, in the Kingdom of Ireland, Merchant, send greeting.

WHEREAS His most Excellent Majesty King George the Third did, by His Letters Patent under the Great Seal of Great Britain, bearing date the Fourth day of June, in the thirtieth year of His reign, give and grant unto me, the said John Long, His especial licence that I, the said John Long, during the term therein expressed, should and lawfully might use, exercise, and enjoy, within England, Wales, and the Town of Berwick-upon-Tweed, my Invention of "An Entire new Method in all the Essential Parts of Brewing Good Malt Liquor without any Addition to the usual Quantity of Malt or Hops;" in which said Letters Patent there is a proviso, obliging me, the said John Long, under my hand and seal, to cause a particular description of the nature of my Invention, and how the same is to be performed, to be inrolled in His Majesty's High Court of Chancery within one calendar month after the date of the said recited Letters Patent, as in and by the same (relation being thereunto had) may more fully appear.

NOW KNOW YE, that in compliance with the said proviso, I, the said John Long, do hereby declare that my said Invention is described in manner following, that is to say:—

For the better extracting from malt, near a mash tun place a shallow copper, or other vessel that will readily heat, the curb of which to be on a level with the tun, and to contain from two to six hogsheads, according to the dimensions of

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the tun, more or less, and at the lower end of the copper have a cock, from two to five inches diameter, more or less, to conduct the heated liquor from the copper into a tube, which passes down the external part of the tun and enters it through an aperture about six inches from the bottom ; then, forming two revolutions, more or less, through the body of the tun, and communicating its heat to the worts as it passes through the tube, and then, at a convenient distance from the place it first entred, it runs from the tun into a cistern or tub, situate as near as convenient to the copper or heating vessell, and in the tub or cistern to be placed a pump, for the purpose of conveying the cooler liquor back to the copper or heating vessel again, there to receive the heat of two hundred and eight degrees, more or less, (which it will require after the first half hour, and then convey it through the mashing tun as before, and in the same manner, as long as the working brewer or distiller may think necessary to raise the mashing tun to any degree of heat required. By adhering to the foregoing process, the first liquor may with the greatest safety be let upon the malt from twenty to thirty degrees lower than the present practice, by the which means it operates with gentleness, opens and expands the malt and raw corn, and prepares it for the reception of sharper or warmer liquor, so as to extract the whole of the sacharine quality from the malt and raw corn. By the foregoing method, the mashing tun instead of losing its first heat (which it does by the present practice) continues to increase in heat every moment by conveying the heated liquor through the tube into the tun, by which means at the end of two hours the working brewer or distiller can have the tun brought to any degree of heat he shall think best suited to the different qualities of the malt or raw corn. Persons who would wish to save expence may heat their mashing tun at the side or bottom by a large piece of metalic substance, made fire-proof and fixed therein, which in some degree will answer the end proposed, but with greater trouble and delay.

Secondly, to prevent the worts from receiving disagreeable flavors while in the under back, a tube must be placed at the cock of the mashing tun to receive the wort as it comes off and convey it to a great cistern or refrigerator, which is supplied with a stream of water ; the worts passing through that medium in a spheral tube soon loses that heat which so often proves prejudicial to the brewer and distiller in warm weather ; then pass it from the tube into a vessel in which pumps are placed to return the worts into the copper for the purpose of boiling off. All vessels for receiving the cold wort must be placed lower than the source from which the wort comes.

Thirdly, as the great object of long boiling the wort is remedied by my Invention of taking the extract from the hops in a seperate manner from the worts, I boil my worts no longer than from fifteen to twenty minutes, and by pursuing that method I save much time and fuel, and regulate my lengths accordingly.

Hops

Fourthly, I steep my hops the preceeding day to which they are to be used in a copper or other vessel, with as much fluid, blood warm, as will cover the hops, where it is to remain over a slow fire at least fourteen hours, close covered, the copper at the tenth hour not to be of a greater heat than one hundred and seventy-five degrees, continuing slow until the last hour ; then I bring the copper gradually to a simmer or slow boil, in which state I let it remain about ten minutes, and then run off the fluid ; and this I do at the same time the first wort is boiled off, that they may both pass together through the refrigerator into the fermentation or working tun. After the foregoing operation, I cover the hops again with other liquor, and bring the copper to boil as soon as convenient, and let it remain in that state a considerable until the second worts are boiled off, then I pass the hop fluid with the wort, same as in the first instance ; and if there is a third wort, I boil my hops a third time, with small worts instead of liquor, and pass it off as before, by which means I gradually obtain the whole of the essential oil and pleasing bitter from the hops, which is effectually preserved in the beer.

Fifthly, to cool worts ; when the water is boiled off it is conducted from the cock from the copper or boiler into a tube of a proper dimension, which passes the wort from the cock to the large cistern or refrigerator, and there performs several revolutions in a spheral manner through the same tube, which is immersed in a constant supply of cold water, where it loses the greatest part of its heat in a short time, and from thence continues a strait course through the tube, a little elevated and of a suitable length, placed in brickwork, until it meets a small refrigerator supplied with colder water from a reservoir made for that purpose at the head of the works, from whence a continual stream runs on the surface of the tube down to the great refrigerator, cooling as it passes, in order to enable the working brewer or distiller to send the worts into the backs or working tun at whatever degree of heat he shall think proper. There is no difference between brewer and distiller in this process, but that the distiller immediately passes the strong wort from the mashing tun to the back through the same machinery above inserted ; and the tubes may be made of lead or any other metallic substance.

Sixthly, and to enable me to brew in the warm summer months, I sink my backs or working tuns at least on a level with the ground, but if the deeper the better, and cover them close by an arch, made of bricks or other materials that will totally exclude the atmospheric air from them; I place them as near as possible to a spring or land drain, as their depth will naturally draw the water from thence, which must be so contrived as to pass or flow round the backs or tuns; I then introduce a large tube, which passes through the vessels from a cistern or reservoir excluded from the heat of the external atmosphere; I convey colder water by the tube, which passes through the tuns and keeps the wort several degrees lower than can possibly be done by the present practice, by which means I can produce a compleat fermentation even in the dog days.

Seventhly, in cold or frosty weather, if the tun and backs should lose the first heat intended to carry it through the process, by the foregoing method, you may convey a supply of warm or boiling water by the tube which passes through the body of the backs or tun communicating its heat, which raises to any degree the working brewer shall think proper. By pursuing this method in the coldest season I never want a proper fermentation.

In witness whereof, I, the said John Long, have hereunto set my hand and seal, this Third day of July, One thousand seven hundred and ninety.

JOHN LONG. (L.S.)

J. Eames.

AND BE IT REMEMBERED, that on the Third day of July, in the year above written, the aforesaid John Long came before our Lord the King in His Chancery, and acknowledged the Specification aforesaid, and all and every thing therein contained, in form above written. And also the Specification aforesaid was stamped according to the tenor of the Statute in that case made and provided.

Inrolled the said Third day of July, in the year above mentioned.

LONDON:
Printed by George Edward Eyre and William Spottiswoode,
Printers to the Queen's most Excellent Majesty. 1856.

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ITS ALCOHOL,
Mashing-
Wort,
Hopping.

English Patent 1754, of 1790, Long. (Mashing Processes).

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